



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,008	05/10/2006	Yorishige Ishii	65486(70820)	6689
21874 7590 09/11/2007 EDWARDS ANGELL PALMER & DODGE LLP P.O. BOX 55874 BOSTON, MA 02205				
EXAMINER LE, THAO X				
ART UNIT 2814		PAPER NUMBER		
MAIL DATE 09/11/2007		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/579,008

Applicant(s)

ISHII, YORISHIGE

Examiner

Thao X. Le

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 6/67, 2/87, 8/2/6, 5/10/6
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6898340 to Tanaka.

Regarding claim 1, Tanaka discloses a submount for a light emitting/receiving device in fig. 1A, comprising: a mounting surface 20a, col. 4 line 45, on which a light emitting/receiving device 10, col. 4 line 35, is mounted; a device-side opening 31a, fig. 1A, which is provided in the mounting surface 20a and through which light inputted to or outputted from the light emitting/receiving device 10 passes; an outer opening (bottom portion of 31a) provided in a face facing the mounting surface 20a; a reflecting surface (side wall of 31) which adjoins the device-side opening 31a and the outer opening and which is formed parallel with a specified crystal orientation face so as to reflect the light between one side on which the light emitting/receiving device 10 is provided and another side on which the outer opening is opened, col. 5 lines 40-45.

Regarding claim 2, Tanaka discloses the submount for the light emitting/receiving device as claimed in claim 1, wherein the submount is formed of single crystal silicon 20, col. 4 line 44; the mounting surface 20a is parallel with a (100)-oriented surface of the single crystal silicon, and the reflecting surface is parallel with a (111)-oriented surface of the single crystal silicon 20, fig. 1A.

Regarding claim 6, Tanaka discloses The submount for the light emitting/receiving device as claimed in claim 1, further comprising a dielectric film 32, col. 5 line 40, which surrounds the device-side opening 31a.

Regarding claim 7, Tanaka discloses the submount for the light emitting/receiving device as claimed in claim 1, wherein the device-side opening is rectangular-shaped (top portion of surface 31a is substantially rectangular.)

Regarding claim 8, Tanaka discloses a method for manufacturing a submount for a light emitting/receiving device in fig. 1A, comprising the steps of: performing etching from a face of a substrate 20 opposite to a mounting surface 20a on which a light emitting/receiving device 10 is mounted to form an outer opening (bottom surface 20b) and a through hole 31 adjoining the outer opening; and removing a portion of the substrate 20 corresponding to the mounting surface 20a, fig. 1A to form a device-side opening 31a adjoining the through hole 31 and having a specified size.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6898340 to Tanaka in view of US 6057697 to Liu.

Regarding claims 3-5, Tanaka discloses the submount for the light emitting/receiving device as claimed in claim 1, further comprising a through hole 31, col. 4 line 53, for connecting the device-side opening 20a and the outer opening to each other; a first metal film 33, col. 7 line 43, formed on an inner side face of the through hole 31.

But Tanaka does not disclose a dielectric film formed on a surface of the first metal film; and a second metal film formed on a surface of the dielectric film, wherein a surface of the second metal film serves as the reflecting surface.

However, Liu discloses a reflector in fig. 9 comprise a substrate 102 a first metal layer 104 cover the surface of the first metal 104, a dielectric layer 106 over the first metal layer 104, and a second metal layer 108 over the dielectric layer 106, col. 3 lines 23-28. At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use the reflector teaching of Liu in the submount of Tanaka in order to have an excellent anti-glare effect as taught by Liu, see abstract.

Regarding claim 9, Tanaka does not disclose the method for manufacturing a submount for a light emitting/receiving device as claimed in claim 8, wherein the portion of the substrate corresponding to the mounting surface is removed by polishing.

However, Tanaka discloses a flat mounting surface. At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use the chemical mechanical polishing (CPM) process in order to obtain a flat or smooth surface as claimed because the CPM process is well known and typical in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X. Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2814

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

09 Sept. 2007

/Thao X Le/
Primary Examiner, Art Unit 2814